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PATENT APPLICATION

IN THE U.S. PATENT AND TRADEMARK OFFICE

January 9, 2009

Applicant: Masaya OKITA
For: METHOD FOR DRIVING A NEMATIC LIQUID CRYSTAL
Serial No.: 10/669 031 Group: 2629
Confirmation No.: 1821
Filed: September 23, 2003 Examiner: Piziali
Atty. Docket No.: 4356.P006BUS

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

SECOND SUPPLEMENTAL APPELLANT'S BRIEF ON APPEAL

Sir:

This is an appeal from the decision of the Examiner dated December 11, 2007, finally rejecting Claims 3, 4, 7, 10, 15 and 20-35.

In response to the Notification of Non-Compliant Appeal Brief dated December 9, 2008, Appellant wishes to provide a summary of the interviews between the Examiner and Appellant's

(Please see the following pages.)

CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on January 9, 2009.

Terryence F. Chapman

representative on August 25, 2008 and January 5, 2009. In the interview conducted on August 25, 2008, Appellant's representative requested clarification of a Notice of Non-Compliant Amendment, Notification of Non-Compliant Appeal Brief and Advisory Action, all mailed on August 20, 2008. The Examiner stated that an amendment to Claim 22 filed on September 21, 2007 was improperly entered because it was not marked-up properly because of the spelling of "absolut'e". Appellant's representative informed the Examiner that there was no such spelling of the word "absolute" in Appellant's copy of the amendment and that the Patent Office's copy of the claim probably resulted from an artifact introduced during the copying of the claims. The Examiner and Applicant's representative disagreed with respect to whether an amendment to the claims dated June 4, 2008 should have been entered. At no time did Appellant's representative "boast" to the Examiner about how the Board of Appeals was going to reverse the Examiner in this particular application. This type of mischaracterization is unprofessional and does not aid in the prosecution of the present application.

In the interview conducted on January 5, 2009, Appellant's representative indicated that he wished to speak to the Examiner's superintendent because he felt that the Examiner was unprofessional in his handling of the present application and that two Appeal Briefs were filed and each Appeal Brief was objected to as being non-compliant by the Examiner for completely different reasons. The Examiner indicated that he wanted a summary of the interviews conducted with him presented in the Appeal Brief and the Appeal Brief amended to set forth the acts described in the specification as corresponding to each claim function with reference to the drawings by reference characters. Appellant's representative stated that even though the present claims were "method" claims that did not require drawings and the only drawings were graphs, in the present application he would do so in order to expedite the prosecution of the present application

but that if he felt that the Examiner was continuing to act unprofessionally, he would contact the Group Director.

REAL PARTY IN INTEREST

Masaya Okita and Hunet, Inc. are the assignees of the present application and the real parties in interest.

RELATED APPEALS AND INTERFERENCES

There are no related appeals and interferences to the present application.

STATUS OF CLAIMS

Claims 3, 4, 7, 10, 15 and 20-35 are pending and are the claims under consideration on appeal. Claims 1, 2, 5, 6, 8, 9, 11-14 and 16-19 have been canceled.

STATUS OF AMENDMENTS

The Amendment After Final Rejection dated June 2, 2008 solely addressing a 35 USC 112, second paragraph rejection newly made in the Final Rejection, was not entered, even though the Final Rejection should have been withdrawn since a new ground of rejection was made that was not necessitated by an amendment made by the Appellant.

SUMMARY OF CLAIMED SUBJECT MATTER

Appellants' invention, as defined by independent Claim 20, is directed to a method for driving a nematic liquid crystal in a liquid crystal display device comprising a nematic liquid crystal (paragraph [0013] of the specification), two electrodes sandwiching the nematic liquid crystal (paragraph [0013] of the specification), two polarizing plates sandwiching the two electrodes (paragraph [0013] of the specification) and a matrix liquid crystal panel using a nematic liquid crystal (paragraph [0035] of the specification), consisting of the steps of applying a first voltage corresponding to image data (V1 in Fig. 1) to the

liquid crystal during a first time period in a unit period (T1 in Fig. 1) (paragraphs [0014] and [0024] of the specification), and applying a second voltage that does not correspond to image data (-V1 in Fig. 1) to the liquid crystal during a second time period in the unit period (T1 in Fig. 1) (paragraphs [0015] and [0024] of the specification), wherein the unit period consists of the first time period and the second time period (paragraph [0024] of the specification), and the optical transmittance of the nematic liquid crystal changes from an initial level corresponding to the second voltage to a level corresponding to image data during the first time period and changes from the level corresponding to image data to the initial level corresponding to the second voltage during the second time period (paragraph [0025] of the specification), and the matrix liquid crystal panel is an active matrix liquid crystal panel (paragraph [0035] of the specification).

Appellants' invention, as defined by independent Claim 22, is directed to an image display method for a liquid crystal display device (paragraph [0013] of the specification) including a matrix liquid crystal panel using a nematic liquid crystal (paragraph [0035] of the specification), consisting of the steps of applying a first absolute voltage corresponding to image data (V1 in Fig. 1) to the liquid crystal during a first time period in a unit period (T1 in Fig. 1) (paragraphs [0014] and [0024] of the specification), and applying a second absolute voltage having a predetermined potential and that does not correspond to image data (-V1 in Fig. 1) to the liquid crystal in a second time zone different from the first time zone in the unit period (T1 in Fig. 1) (paragraphs [0015] and [0024] of the specification), wherein the matrix liquid crystal panel is an active matrix liquid crystal panel (paragraph [0035] of the specification).

Appellants' invention, as defined by independent Claim 23, is directed to a method for driving a nematic liquid crystal in a liquid crystal display device that includes a

nematic liquid crystal (paragraph [0013] of the specification), two electrodes confining the nematic liquid crystal (paragraph [0013] of the specification), a pair of polarizing plates sandwiching the electrodes (paragraph [0013] of the specification) and a matrix liquid crystal panel using a nematic liquid crystal (paragraph [0035] of the specification), consisting of the steps of applying a first absolute voltage corresponding to image data (V1 in Fig. 1) to the liquid crystal during a first time period in a unit period (T1 in Fig. 1) (paragraphs [0014] and [0024] of the specification), and applying a second absolute voltage not corresponding to image data (-V1 in Fig. 1) to the liquid crystal during a second separate predetermined time period in the unit period (T1 in Fig. 1) (paragraphs [0015] and [0024] of the specification), wherein the unit period includes a separate first input of the first absolute voltage, a second input of the second absolute voltage (paragraph [0024] of the specification) and the optical transmittance of the liquid crystal returns to or remains at an original level during the unit period (paragraph [0025] of the specification), and the matrix liquid crystal panel is an active matrix liquid crystal panel (paragraph [0035] of the specification).

Appellants' invention, as defined by independent Claim 26, is directed to a method for driving a nematic liquid crystal in a liquid crystal display device comprising a nematic liquid crystal (paragraph [0013] of the specification), two electrodes sandwiching the nematic liquid crystal (paragraph [0013] of the specification), two polarizing plates sandwiching the two electrodes (paragraph [0013] of the specification) and a matrix liquid crystal panel using a nematic liquid crystal (paragraph [0035] of the specification), consisting of the steps of applying a first absolute voltage corresponding to image data (V1 in Fig. 1) to the liquid crystal during a first time period in a unit period (T1 in Fig. 1) (paragraphs [0014] and [0024] of the specification), and applying a second absolute voltage that

does not correspond to image data (-V1 in Fig. 1) to the liquid crystal during a second time period in the unit period (T1 in Fig. 1) (paragraphs [0015] and [0024] of the specification), wherein the unit period consists of the first time period and the second time period (paragraph [0024] of the specification), and the optical transmittance of the nematic liquid crystal changes from an initial level corresponding to the second absolute voltage to a level corresponding to image data during the first time period and changes from a level corresponding to image data to an initial level corresponding to the second absolute voltage during the second time period (paragraph [0025] of the specification), and the first absolute voltage consists of a first positive voltage and a first negative voltage, the sum of the first positive voltage and the first negative voltage is zero volts in the unit period (paragraph [0029] of the specification), and the matrix liquid crystal panel is an active matrix liquid crystal panel (paragraph [0035] of the specification).

Claim 3 limits Claim 20 in requiring that the second voltage applied in the second time period of the unit period erases an image on the panel during the second time period (paragraph [0034] of the specification).

Claim 4 limits Claim 3 in requiring that erasure of the image displayed on the panel is effected by driving the liquid crystal to display black on the panel (paragraphs [0025] and[0034] of the specification).

Claim 7 limits Claim 3 in requiring that the liquid crystal display device is normally black and the second voltage is zero volts (paragraph [0033] of the specification).

Claim 10 limits Claim 21 in requiring that the voltage applied in the second time period of the unit period erases an image on the panel by darkening the TFT liquid crystal panel to substantially black during the second time period (paragraphs [0034] and [0035] of the specification).

Claim 15 limits Claim 23 in requiring that wherein the unit period is less than or equal to eight milliseconds (paragraph [0022] of the specification).

Claim 21 limits Claim 20 in requiring that the liquid crystal display device is a TFT liquid crystal display device (paragraph [0035] of the specification).

Claim 24 limits Claim 23 in requiring that the first absolute voltage consists of a first positive voltage and a first negative voltage and the sum of the first positive voltage and the first negative voltage in the unit period is zero volts (paragraph [0029] of the specification).

Claim 25 limits Claim 20 in requiring that the level corresponding to the second voltage is white or black (paragraph [0025] of the specification).

Claim 27 limits Claim 26 in requiring that the second absolute voltage applied in the second time period of the unit period erases on image on the panel during the second time period (paragraph [0034] of the specification).

Claim 28 limits Claim 26 in requiring that erasure of the image displayed on the panel is effected by driving the liquid crystal to display black on the panel (paragraphs [0025] and [0034] of the specification).

Claim 29 limits Claim 26 in requiring that the liquid crystal display device is normally black and the second absolute voltage is zero volts (paragraph [0033] of the specification).

Claim 30 limits Claim 26 in requiring that the liquid crystal display device is a TFT liquid crystal display device including a plurality of pixels (paragraph [0035] of the specification).

Claim 31 limits Claim 26 in requiring that the level corresponding to the second absolute voltage is white or black (paragraph [0025] of the specification).

Claim 32 limits Claim 20 in requiring that said nematic liquid crystal is a twisted nematic liquid crystal (paragraph [0011] of the specification).

Claim 33 limits Claim 22 in requiring that said nematic liquid crystal is a twisted nematic liquid crystal (paragraph [0011] of the specification).

Claim 34 limits Claim 23 in requiring that said nematic liquid crystal is a twisted nematic liquid crystal (paragraph [0011] of the specification).

Claim 35 limits Claim 26 in requiring that said nematic liquid crystal is a twisted nematic liquid crystal (paragraph [0011] of the specification).

GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

The first ground of rejection to be reviewed on appeal is whether Claims 20, 22, 23, and 26 are incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections under 35 USC 112, second paragraph. The second ground of rejection to be reviewed on appeal is whether Claim 22 is indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention under 35 USC 112, second paragraph. The third ground of rejection to be reviewed on appeal is whether Claims 3, 4, 7, 10, 15, 21, 24, 25, and 27-35 are rejected as being dependent upon rejected base claims under 35 USC 112, second paragraph. The fourth ground of rejection to be reviewed on appeal is whether Claims 3, 4, 7, 10, 15 and 20-35 is anticipated by the applicant's own admission of prior art under 35 USC 102(a). The fifth ground of rejection to be reviewed on appeal is whether Claims 3, 4, 7, 10, 15 and 20-35 are unpatentable over Tanaka et al. in view of Molsen et al under 35 USC 103(a).

ARGUMENT

REJECTION OF CLAIMS 20, 22, 23, and 26 UNDER 35 USC 112, SECOND PARAGRAPH, AS BEING INCOMPLETE FOR OMITTING ESSENTIAL STRUCTURAL COOPERATIVE RELATIONSHIPS OF ELEMENTS, SUCH OMISSION AMOUNTING TO A GAP BETWEEN THE NECESSARY STRUCTURAL CONNECTIONS

Claims 20, 23 and 26 have been rejected under 35 U.S.C. §112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. Specifically speaking, the Examiner has stated that it would be unclear to one of ordinary skill in the art whether the claimed limitations refer to a single shared nematic liquid crystal or to two distinct and independent nematic liquid crystals. Appellants respectfully submit that the current claim language is clear. The claims state that the inventive method can be used for driving a nematic liquid crystal in a liquid display device made up of a nematic liquid crystal, two polarizing plates sandwiching the two electrodes and a matrix liquid crystal panel using a nematic liquid crystal. It would be readily apparent to one of ordinary skill in the art that the liquid crystal display device and the matrix liquid crystal panel are two different devices given the construction of a matrix liquid crystal panel and, especially in light of the present specification, would not be unclear to one of ordinary skill in the art as to the meaning of the claims. The claims on their face are definite and, given the proposition that the claims are to be interpreted in light of the specification, the Examiner's rejection clearly is in error.

Claims 22 and 26 also have been rejected under 35 USC 112, second paragraph, for omitting a structural cooperative relationship between "a first absolute voltage corresponding to image data and a second absolute voltage that does not correspond to image data". The Examiner has stated that it would be unclear to one having ordinary skill in the art

whether the limitations referring to a shared piece of image data or two distinct and independent pieces of image data. Once again, Appellants respectfully submit that the claims are definite on their face and, especially when interpreted in light of the specification, the 35 USC 112, second paragraph, rejection is not proper. The claims recite that a first absolute voltage corresponds to image data and that a second absolute voltage does not correspond to image data. This would be readily apparent to one of ordinary skill in the art that this means that the second absolute voltage does not correspond to any image data, whether the same or different. This rejection clearly is in error and should be overturned.

REJECTION OF CLAIM 22 UNDER 35 USC 112, SECOND PARAGRAPH, AS BEING INDEFINITE FOR FAILING TO PARTICULARLY POINT OUT AND DISTINCTLY CLAIM THE SUBJECT MATTER WHICH APPLICANTS REGARD AS THE INVENTION

Claim 22 has been rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The CAFC in *Energizer Holdings v ITC* (Fed. Cir. 2006) that the lack of antecedent basis alone does not render claims indefinite under 35 USC 112, second paragraph. In this case, the court stated that the test was whether a person experienced in the field of the invention would understand the scope of the claims when read in light of the specification. Although there is not proper antecedent basis for "the first time zone" in Claim 22, given the disclosure of the present specification, one of ordinary skill in the art would clearly be able to understand the scope of Claim 22. This is evidenced by the Examiner's rejections of Claim 22 under 35 USC 102(a) and 35 USC 103(a). Therefore, the Examiner's rejection of Claim 22 as being indefinite is clearly in error and should be reversed.

REJECTION OF CLAIMS 3, 4, 7, 10, 15, 21, 24, 25, and 27-35 UNDER 35 USC 112, SECOND PARAGRAPH, AS BEING DEPENDENT UPON REJECTED BASE CLAIMS

Claims 3, 4, 7, 10, 15, 21, 24, 25, and 27-35 have been rejected under 35 U.S.C. §112, second paragraph, as being dependent upon rejected base claims. As discussed above, independent Claims 20, 22, 23, and 26 are allowable, and as such, Claims 3, 4, 7, 10, 15, 21, 24, 25 and 27-35 are also believed to be allowable therewith.

REJECTION OF CLAIMS 3, 4, 7, 10, 15 AND 20-35 UNDER 35 USC 102(a) AS BEING ANTICIPATED BY THE APPLICANTS' OWN ADMISSION OF PRIOR ART

Claims 3, 4, 7, 10, 15, and 20-35 have been rejected under 35 U.S.C. §102(a) as being anticipated by the applicant's own admission of prior art. Applicant respectfully traverses this ground of rejection and urges that Figure 2 erroneously labeled as prior art in parent Application Serial No. 09/801 098 cannot be used as prior art against claims because the erroneously labeled Figure was the Applicant's own work. It is readily apparent that Figures 1 and 2 originally submitted in 09/801 098 are identical with the except of Figure 2 being improperly labeled as "Prior Art" and the correct Figure 2 not submitted. MPEP 2129, titled Admissions as Prior Art, clearly shows that even if labeled as "prior art," the work of the same inventive entity may not be considered prior art against the claims unless it falls under one of the statutory categories. See *Riverwood Int'l Corp. v. R.A. Jones & Co.*, 324 F.3d 1346, 1354, 66 USPQ2d 1331, 1337 (Fed Cir. 2003); see also *Reading & Bates Construction Co. v. Baker Energy Resources Corp.*, 748 F.2d 645, 650, 223 USPQ 1168, 1172 (Fed. Cir. 1984)("[W]here the inventor continues to improve upon his own work product, his foundational work product should not, without a statutory basis, be treated as prior art solely because he admits knowledge of his own work. It is common sense that an inventor, regardless of an

admission, has knowledge of his own work."). In the present case, originally submitted Figure 2 of 09/801 098 is the work of the Applicant, not the work of another. Paragraph [0012] clearly recites that the inventor measured dynamic characteristics of applied voltage waveforms and optical transmittance of nematic liquid crystals to develop a liquid crystal panel having a response speed enabling color images by tricolor back-lighting. Paragraph [0012] also recites that the present invention is based on the above knowledge of the Inventor, and its basic concept lies in increasing the response speed of a liquid crystal by applying a voltage to the liquid crystal at a unique timing different from those of conventional driving circuits. As such, the erroneously labeled Figure 2 as prior art in the parent application is not prior art against the claims of the present invention. Therefore, this rejection of Claims 3, 4, 7, 10, 15, and 20-35 is clearly in error.

REJECTION OF CLAIMS 3, 4, 7, 10, 15 AND 20-35
UNDER 35 USC 103(a) AS BEING UNPATENTABLE
OVER TANAKA ET AL IN VIEW OF MOLSEN ET AL

Claims 3, 4, 7, 10, 15, and 20-35 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Tanaka et al. (US Patent No. 5 594 464) in view of Molsen et al (US Patent No. 6 122 024). Applicant respectfully traverses this ground of rejection and urges that the presently claimed invention is patentably distinguishable over the prior arts cited by the Examiner.

The presently claimed invention in Claim 20 is directed to a method for driving a nematic liquid crystal in a liquid crystal display device comprising a nematic liquid crystal, two electrodes sandwiching the nematic liquid crystal, two polarizing plates sandwiching the two electrodes and a matrix liquid crystal panel using a nematic liquid crystal, consisting of the steps of: (1) applying a first voltage corresponding to image data to the liquid crystal during a

first time period in a unit period, and (2) applying a second voltage that does not correspond to image data to the liquid crystal during a second time period in the unit period, wherein the unit period consists of the first time period and the second time period, and the optical transmittance of the nematic liquid crystal changes from an initial level corresponding to the second voltage to a level corresponding to image data during the first time period and changes from the level corresponding to image data to the initial level corresponding to the second voltage during the second time period, and the matrix liquid crystal panel is an active matrix liquid crystal panel.

The present invention provides a nematic liquid crystal driving method which increases the response speed of any conventional nematic liquid crystal in order to enable coloring by tricolor back-lighting and to ensure the higher performance in reproduction of moving images. The present invention is based on the knowledge of the inventor that the optical transmittance changes very quickly in response to changes in applied voltages. The liquid can be driven at a much higher response speed by returning or maintaining the voltage across two electrodes in a predetermined value for a predetermined time period in predetermined intervals.

The two different voltages applied in the present invention consist of: 1) the first voltage applied across two electrodes in a first time period which is time period other than the predetermined duration of time in each interval; and 2) the second voltage applied across two electrodes being returned to and maintained in a predetermined value in a second time period which is a predetermined duration of time in the interval. As claimed in Claim 20 and also as shown in Figure 1, each of the intervals of time consists of two time periods - the predetermined duration (the second time period) and the duration of time other than the predetermined duration (the first time period). During the predetermined duration (the second time period), the second voltage of 0 V which is

irrespective to image data is applied, while during the duration of time other than the predetermined duration (the first time period) the first voltage - V1 or 0 V depending upon the image data, as shown in Figure 1 - responsive to the image data is applied. Thus, the applied voltage is forcibly changed to or maintained in 0 V for the predetermined time period in each interval.

Figure 1 shows the applied voltages in the present invention. In each of the intervals, T1, T2, T4 and T6, the first applied voltage is V1 in response to the image data. In each of the intervals, T3 and T5, the first applied voltage in response to the image data is 0 V. Each of the intervals, T1-T6, the second voltage of 0 V is forcibly applied.

Tanaka discloses a liquid crystal display, comprising: a chiral nematic liquid crystal medium interposing a pair of electrode substrates; and a driving circuit for a) applying a reset voltage across the liquid crystal display electrodes to induce a transition from the pre-selected state to the reset state, and b) after application of the reset voltage, applying one of: 1) a first metastable activation voltage greater than a critical voltage and less than the reset voltage to place the chiral nematic liquid crystal medium in the first metastable state, or 2) a second metastable activation voltage less than both the critical voltage and the reset voltage to place the chiral nematic liquid crystal medium in the second metastable state.

Further, as shown in Figure 2, Tanaka teaches in the specification the applied scan electrode waveform 201, the applied signal electrode waveform 202, and the resulting composite waveform 203 of the two waveforms 201 and 202. Tanaka discloses that an applied voltage in a first time period generates Frederick's transition, followed by another applied voltage in a second time period to select one of the two metastable states, depending upon whether the ON condition is selected or the OFF condition is selected. Then, a third

applied voltage in a third time period facilitates multiplexing driving.

Tanaka, however, does not disclose that the second voltage of 0 V which is irrespective to image data is forcibly applied, in order to improve the response speed of the optical transmittance by changing the applied voltages. The first voltage (V1) and the second voltage (V2) in Figure 2 of Tanaka represent the applied scan waveform and the applied signal waveform, respectively, in all of the time periods. Figure 2 of Tanaka, in time period t03, clearly shows that both the non-zero first voltage (V1) and the non-zero second voltage (V2) can be applied at the same time period, with the resulting waveform of V1+V2. On the contrary, in the present invention, the first voltage corresponding to image data is applied only in a first time period, and the second voltage irrespective of the image data is applied only in a second time period.

Molsen disclose in column 6, lines 35-48 that each pixel may be provided with a respective electrical switching element in order to provide an active matrix display. On the contrary, the present invention includes an active matrix liquid crystal panel to increase the operation speed of the liquid crystal by changing the applied voltage value.

Accordingly, Claim 20 is believed to be patentably distinguishable over Tanaka and Molsen, alone or in combination with one another.

Other independent Claims 22, 23, and 26 disclose the similar steps as shown in Claim 20. Claim 22 discloses the steps of: 1) applying a first absolute voltage corresponding to image data to the liquid crystal during a first time period in a unit period; and 2) applying a second absolute voltage having a predetermined potential and that does not correspond to the image data to the liquid crystal during a second time period different from the first time period in the unit period.

Claim 23 discloses the steps of: 1) applying a first absolute voltage corresponding to image data to the liquid crystal during a first time period in a unit period; and 2) applying a second absolute voltage that does not correspond to the image data to the liquid crystal during a second separate predetermined time period in the unit period.

Claim 26 also discloses the steps of: 1) applying a first absolute voltage corresponding to image data to the liquid crystal during a first time period in a unit period; and 2) applying a second absolute voltage that does not correspond to the image data to the liquid crystal during a second time period in the unit period.

With the same reasons, Claims 22, 23 and 26 are believed to be patentably distinguishable over Tanaka and Molsen, alone or in combination with one another. As discussed above for Claim 20, the second step of Claims 22, 23 and 26 discloses that the second voltage of 0 V that is not responsive to the image data is forcibly applied, while Tanaka and Molsen do not teach such a feature that the voltage of 0 V is forcibly applied during the second time period.

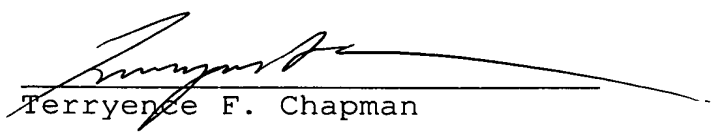
As such, Claims 22, 23 and 26 are patentably distinguishable over Tanaka and Molsen, alone or in combination with one another.

Claims 3, 4, 7, 10, 15, 21, 24, 25 and 27-35 depend upon what is believed to be allowable Claims 20, 22, 23 or 26, and as such, are believed allowable therewith.

CONCLUSION

Reversal of the Examiner's rejection of Claims 3, 4, 7, 10, 15 and 20-35 is respectfully solicited.

Respectfully submitted,



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Encl: Claims Appendix
Evidence Appendix
Related Proceedings Appendix
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CLAIMS APPENDIX

3. The method according to Claim 20 wherein the second voltage applied in the second time period of the unit period erases an image on the panel during the second time period.

4. The method according to Claim 3 wherein erasure of the image displayed on the panel is effected by driving the liquid crystal to display black on the panel.

7. The method according to Claim 3 wherein the liquid crystal display device is normally black and the second voltage is zero volts.

10. The method according to Claim 21 wherein the voltage applied in the second time period of the unit period erases an image on the panel by darkening the TFT liquid crystal panel to substantially black during the second time period.

15. The method for driving a nematic liquid crystal according to Claim 23 wherein the unit period is less than or equal to eight milliseconds.

20. A method for driving a nematic liquid crystal in a liquid crystal display device comprising a nematic liquid crystal, two electrodes sandwiching the nematic liquid crystal, two polarizing plates sandwiching the two electrodes and a matrix liquid crystal panel using a nematic liquid crystal, consisting of the steps of:

applying a first voltage corresponding to image data to the liquid crystal during a first time period in a unit period; and

applying a second voltage that does not correspond to image data to the liquid crystal during a second time period in the unit period,

wherein the unit period consists of the first time period and the second time period, and the optical transmittance of the nematic liquid crystal changes from an initial level corresponding to the second voltage to a level corresponding to image data during the first time period and changes from the level corresponding to image data to the initial level corresponding to the second voltage during the second time period, and the matrix liquid crystal panel is an active matrix liquid crystal panel.

21. The method according to Claim 20 wherein the liquid crystal display device is a TFT liquid crystal display device.

22. An image display method for a liquid crystal display device including a matrix liquid crystal panel using a nematic liquid crystal, consisting of the steps of:

applying a first absolute voltage corresponding to image data to the liquid crystal during a first time period in a unit period; and

applying a second absolute voltage having a predetermined potential and that does not correspond to image data to the liquid crystal in a second time zone different from the first time zone in the unit period,

wherein the matrix liquid crystal panel is an active matrix liquid crystal panel.

23. A method for driving a nematic liquid crystal in a liquid crystal display device that includes a nematic liquid crystal, two electrodes confining the nematic liquid crystal, a pair of polarizing plates sandwiching the electrodes and a matrix liquid crystal panel using a nematic liquid crystal, consisting of the steps of:

applying a first absolute voltage corresponding to image data to the liquid crystal during a first time period in a unit period; and

applying a second absolute voltage not corresponding to image data to the liquid crystal during a second separate predetermined time period in the unit period,

wherein the unit period includes a separate first input of the first absolute voltage, a second input of the second absolute voltage and the optical transmittance of the liquid crystal returns to or remains at an original level during the unit period and the matrix liquid crystal panel is an active matrix liquid crystal panel.

24. The method according to Claim 23 wherein the first absolute voltage consists of a first positive voltage and a first negative voltage and the sum of the first positive voltage and the first negative voltage in the unit period is zero volts.

25. The method according to Claim 20 wherein the level corresponding to the second voltage is white or black.

26. A method for driving a nematic liquid crystal in a liquid crystal display device comprising a nematic liquid crystal, two electrodes sandwiching the nematic liquid crystal, two polarizing plates sandwiching the two electrodes and a matrix liquid crystal panel using a nematic liquid crystal, consisting of the steps of:

applying a first absolute voltage corresponding to image data to the liquid crystal during a first time period in a unit period; and

applying a second absolute voltage that does not correspond to image data to the liquid crystal during a second time period in the unit period,

wherein the unit period consists of the first time period and the second time period, and the optical transmittance of the nematic liquid crystal changes from an initial level corresponding to the second absolute voltage to a level corresponding to image data during the first time period and

changes from a level corresponding to image data to an initial level corresponding to the second absolute voltage during the second time period, and

the first absolute voltage consists of a first positive voltage and a first negative voltage, the sum of the first positive voltage and the first negative voltage is zero volts in the unit period, and the matrix liquid crystal panel is an active matrix liquid crystal panel.

27. The method according to Claim 26 wherein the second absolute voltage applied in the second time period of the unit period erases on image on the panel during the second time period.

28. The method according to Claim 26 wherein erasure of the image displayed on the panel is effected by driving the liquid crystal to display black on the panel.

29. The method according to Claim 26 wherein the liquid crystal display device is normally black and the second absolute voltage is zero volts.

30. The method according to Claim 26 wherein the liquid crystal display device is a TFT liquid crystal display device including a plurality of pixels.

31. The method according to Claim 26 wherein the level corresponding to the second absolute voltage is white or black.

32. The method according to Claim 20, wherein said nematic liquid crystal is a twisted nematic liquid crystal.

33. The method according to Claim 22, wherein said nematic liquid crystal is a twisted nematic liquid crystal.

34. The method according to Claim 23, wherein said nematic liquid crystal is a twisted nematic liquid crystal.

35. The method according to Claim 26, wherein said nematic liquid crystal is a twisted nematic liquid crystal.

EVIDENCE APPENDIX

There is no extrinsic evidence of record in the present application.

RELATED PROCEEDINGS APPENDIX

There are no related proceedings to the present application.